

REMARKS

Applicants wish to thank the Examiner for reviewing the present patent application. Regarding the amendments, Applicants respectfully submit that no new issues have been raised in the amendments since the subject matter relied on had already been present in dependent claims. Applicants have also corrected an inadvertent error by correcting the spelling of glutamine. In this regard, no new issues have been raised that would require further searching and the amendments comply with 35 USC §132.

I. Rejection Under 35 USC §103

The Examiner has rejected claims 1-20 under 35 USC §103 as being unpatentable over Wei et al., U.S. Patent No. 7,060,301 in view of Kneuvan, U.S. Patent No. 6,620,445 and Hu, Y. et al., XP 0023158389 and further in view of Prepared Foods (hereinafter, '301, '445, '839 and Prepared Foods).

In the rejection, the Examiner mentions, in summary, that the '301 reference describes an antimicrobial composition which can be used in a beverage. The Examiner mentions that the '301 reference at claim 17 describes a composition which is heated for at least five (5) seconds to a temperature of 0-100°C. The Examiner admits that pKa values are not described in the '301 reference and the Examiner relies on the '445 reference which apparently describes the use of water and alkaline metal bisulphate in foods. The Examiner notes that sodium bisulphate has a pKa of 1.99 and that no citric acid is seen in the composition mentioned in the '445 reference.

The Examiner relies on the '839 reference for showing that it is known to make compositions that have minerals, water, juice and hydrochloric acid. Furthermore, the Examiner relies on Prepared Foods and concludes that it known to use sodium acid sulphate in beverages containing tea. In view of the above, the Examiner concludes that the discovery of an optimum value of a result effective variable is ordinarily within the skill of the art. The Examiner further concludes that in developing a beverage product, properties such as preservation and flavor are important and it appears that the precise ingredients as well as their proportions affect the preservation and flavor of product. Thus, the Examiner concludes that one of ordinary skill in the art would routinely optimize a beverage composition to result in the present invention. Based on the above, the Examiner believes that the rejection made under 35 USC §103 is warranted.

Notwithstanding the Examiner's apparent position to the contrary, it is the Applicants' position that the presently claimed invention is patentably distinguishable from the above-described for at least the following reasons.

The present invention, as set forth in independent claim 1, as amended, is directed to a beverage comprising water, polyprotic antimicrobial agent having a pK_{a1} of less than about 2.6 and a pK_{a2} of less than about 3 or greater than about 6 or both and at least about 0.01% by weight tea solids wherein the beverage is substantially free of citric acid and the polyprotic antimicrobial agent is phosphoric acid or a hydrochloride of glycine, alanine, valine, leucine, isoleucine, phenylalanine, asparagine, glutamine, tryptophan, serine, tyrosine, hydroxyproline, cysteine, proline or mixtures thereof. The invention of claim 1, as amended, is further defined by the dependent claims which claim, among other things, the amount of citric acid present, that the beverage may further comprise dairy sauce, fruit flavor, vegetable, cocoa, coffee, tea or a mixture thereof, the weight

percent tea solids, that the beverage is not sweetened, that the beverage is not carbonated, the pH of the beverage, the temperature at which the beverage is thermally treated, and the packaging suitable for the beverage.

Independent claim 17, as amended, is directed to a method for making a microbiological stable beverage comprising, in no particular order, the steps of mixing a beverage precursor with water and acidulant to produce a mixture and thermally treating the mixture at a temperature from about 80°C to about 95°C to produce the microbiologically stable beverage wherein the acidulant is polyprotic and has a pK_{a1} of about less than about 2.6 or a pK_{a2} of less than about 3 or greater than about 6 and the beverage is tea containing with at least about 0.1% by weight tea solids, further wherein the polyprotic antimicrobial agent is phosphoric acid or a hydrochloride of glycine, alanine, valine, leucine, isoleucine, phenylalanine, asparagine, glutamine, tryptophan, serine, tyrosine, hydroxyproline, cysteine, proline or mixtures thereof.

Independent claim 17, as amended, is further defined by the dependent claims which claim, among other things, the amount of tea solids that may be in the beverage, and the amount of citric acid that may be present in the beverage.

In contrast, and as already made of record, the '301 reference is merely directed to in situ mono- or diester dicarboxylate containing compositions that can reduce the population of microbes on various surfaces found in food, beverage, or pharmaceutical processing facilities. The '301 reference is not even remotely directed to a beverage. Furthermore, the type of antimicrobially agents claimed in the independent claims as amended, are not found in the '301 reference. In an attempt to cure the deficiencies of the '301 reference, the Examiner relies on the '445 reference; however, the '445 reference merely describes alkaline metal bisulfates as acidulants in foods like baked

goods, beverages and candies where the beverages are dietetic drinks, fruit juice drinks and sports drinks. Particularly the '445 reference does not describe a beverage having the claimed amount of tea solids and does not describe antimicrobial agents which are polyprotic as claimed in the inventions, as amended. The '839 abstract cures none of the deficiencies of the primary reference since the same is only directed to a composition containing minerals, pure water, juice and hydrochloric acid. The '839 abstract which is relied on by the Examiner merely describes a mineral preparation to get minerals into beverage. It does not, even remotely, describe a beverage composition having the polyprotic antimicrobial agent as set forth in the present invention, as amended. Finally, the Prepared Food reference cures none of the vast deficiencies of the primary reference since the same only describes beverages that have flavors which include banana, chocolate, coconut, cola, coffee, moca, tea, toffee and vanilla. There is no teaching whatsoever in the Prepared Foods document that even remotely suggests a claimed antimicrobial system, and particularly, such a system in combination with tea solids. In view of this, it is clear that all the important and critical limitations set forth in the presently claimed inventions, as now amended, are not found in the combination of references relied on by the Examiner. Therefore, Applicants respectfully request that the obviousness rejection be withdrawn and rendered moot.

II. Rejection Under 35 USC §103

The Examiner has rejected claims 1, 2, 3, 4, 5, 6, 11, 15, and 16 under 35 USC §103 as being unpatentable over Knueven, U.S. Patent No. 6,620,445 in view of Prepared Foods and further in view of Selsted et al., U.S. Patent No. 5,324,716 (hereinafter, '445, Prepared Foods, and '716). In the rejection, the Examiner mentions that the '445 reference discloses a lemonade beverage with water and alkaline metal bisulphate. The Examiner further mentions that the Prepared Food article discloses that it is known

to use sodium acid sulfate in beverages. Finally, the Examiner relies on the '716 reference and alleges that it is known to use tryptophan-rich peptides in foods. In view of the above, the Examiner believes that the obviousness rejection is warranted.

Notwithstanding the Examiner's apparent position to the contrary, it is the Applicants' position that the presently claimed invention is patentably distinguishable from the above-described for at least the following reasons.

As already made of record, independent claim 1 and independent claim 17 have been amended such that the antimicrobial agent or acidulant is now defined as one which is polyprotic, has a pK_a of less than about 2.6 or a pK_{a2} of less than about 3 or greater than about 6, further wherein the polyprotic agent or acidulant is phosphoric acid or a hydrochloride of glycine, alanine, valine, leucine, isoleucine, phenylalanine, asparagine, glutamine, tryptophan, serine, tyrosine, hydroxyproline, cysteine, proline or mixtures thereof.

As already made of record, the '445 reference merely describes lemonade compositions with water and alkalide metal bisulfate. The Prepared Foods document only describes beverages that have flavors which contain, banana, chocolate, coconut, cola, coffee, moca, tea, toffee and vanilla whereby there is no teaching in the Prepared Foods document that even remotely suggest the claimed antimicrobial system as now amended and in combination with tea solids.

The '716 reference does not, even remotely, cure any of the vast deficiencies of the '445 reference in combination with the Prepared Foods document since the '716 reference merely describes a broad spectrum antimicrobial compound that includes a tryptophan-rich peptide exhibiting antimicrobial activity. The '716 reference is

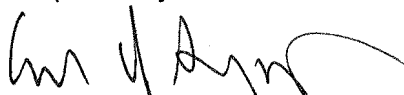
concerned with peptides whereby the presently claimed invention as presented and amended is one which employs specific polyprotic antimicrobial agents or acidulants that are amino acids and not tryptophan-rich peptides. In view of this, it is clear that all of the important and critical limitations set forth in the presently claimed inventions, as amended, are not found in the combination of references relied on by the Examiner. Thus, Applicants request that the obviousness rejection be withdrawn and rendered moot.

Applicants submit that all claims of record are now in condition for allowance. Reexamination and reconsideration are earnestly solicited.

Applicants further submit that all claims of record are now ready for appeal. Applicants would appreciate assistance from the Examiner so that the claims can pass to issue and so that the extreme expense of an appeal can be avoided.

In the event any questions remain, the Examiner is kindly invited to contact the undersigned counsel at her earliest convenience.

Respectfully submitted,



Edward A. Squillante, Jr.
Registration No. 38,319
Attorney for Applicant(s)

EAS/pod
(201) 894-2925